Definitions:
Hyponatremia, defined as serum sodium less than 135mEq/L, is a common condition seen in neuroscience patients. Symptoms of hyponatremia vary depending on sodium level and how quickly hyponatremia develops. Acute hyponatremia develops rapidly in less than 24 to 36 hours and patients may be symptomatic. Chronic hyponatremia develops slowly and patients may have less pronounced neurologic deficits because the brain has adjusted to the decreasing sodium over time. Acute decreases in sodium to 125 – 130mEq/L may cause headache, nausea, myalgia, and general malaise. When sodium decreases to 115 – 120mEq/L, patients become lethargic, confused and agitated followed by seizures, coma and possibly cerebral edema and death. Treatment of hyponatremia includes assessment of volume status and laboratory values including serum sodium, urine sodium, serum osmolality and urine osmolality. Sodium replacement maybe achieved through oral, parenteral or intravenous routes.

Intravenous sodium replacement must be managed carefully. Rapid correction of sodium can cause water to shift too quickly out of brain cells resulting in irreversible demyelination of the pons. This syndrome, called central pontine myelinolysis (CPM), results in a decreased level of consciousness and severe quadraparesis. To limit the risk of CPM, serum sodium should rise gradually and not increase more than 0.5mEq/L per hour.

Level: Interdependent - asterisked [*] items require an order from a health care practitioner licensed to prescribe medical therapy.

Personnel:

Competencies/Skills:

Required Resources:

Policy Statement:
Purpose: To ensure the appropriate administration of hypertonic saline to patients with hyponatremia.
A. Administration
1. Confirm order for 1.8% saline or 3% saline (order to be written in mL/hour)
2. Ensure appropriate venous access for administration
   a. 1.8% or 3% saline may be administered via peripheral line
   b. PICC or central venous line is preferred for administration of 3% saline
      (hypertonic saline in concentrations ≥ 3% may cause vascular irritation)
3. Hypertonic saline is administered as a primary infusion via infusion pump.
   a. Patients receiving infusion of 1.8% saline may be managed in floor/routine setting. An increase in level of care may be necessary if frequency of sodium monitoring exceeds monitoring available in floor/routine setting.
   b. Patients receiving infusion of 3% saline will be managed in the ICU at DRH and on Stepdown/Telemetry or ICU at DUH & DRaH.
4. Monitoring of serum sodium is per physician/physician designee order

B. Reportable Conditions
1. Acute neurologic change
2. Increase in serum sodium of more than 0.5 – 1 mEq/L per hour or more than 12mEq/L in 24 hours
3. Loss of intravenous access that prohibits administration of 1.8% saline or 3% saline or inadequate access for type of saline being administered
4. Inability to obtain blood draws as ordered
5. Infiltration of 1.8% saline or 3% saline
6. Sodium value of ≥ 140 mEq/L for continuous rate adjustment

REFERENCES

Citations:


Policies:

Authoritative Source:

Additional References:

Attachment Names:

External Links:

Entities:

DRAH
DRH
DUH